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USSR

UDC 669.017;538

IL'YUSHENKO, L. F., Electroliticheskiye i Osazhdennyye Magnitnyye Plenki, Nauka i Tekhnika Press, 1972, 264 pages.

Magnetic Properties of Films of Pure Metals 139
Magnetic Properties of Films of Binary Alloys 145
Iron-Nickel Films 145
Iron-Nickel Films with Sulfur, Phosphorus and Arsenic 167
Aging, Stabilization of Properties and Annealing of Electrolytically Deposited Films 180
Ni-Co Films 189
Iron-cobalt Films 193
Magnetic Properties of Films of Trinary Iron-Nickel-Cobalt Alloys 196
Magnetic Properties of Films of Binary and Trinary Alloys of Iron-Group Metals with Chromium 207
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UDC 539.216.22:546

USSR

IL'YUSHENKO, L. F., and BOLTUSHKIN, A. V., Institute of Solid State and Semiconductor Physics, Academy of Sciences BSSR

"Electric Deposition of Films of Binary Alloys of Metals of the Iron Group With Chromium"

Minsk, Izvestiya Akademii Nauk BSSR, Seriya Fiziko-Matematicheskikh Nauk, No 6, 1970, pp 125-128

Abstract: Since there was no data in the literature on electrolytic magnetic films containing chromium, this study was made to show conditions necessary to produce Fe-Cr, Ni-Cr, and Co-Cr films of various compositions and study the dependence of their magnetic properties on chromium content. It is noted that magnetic alloys based on metals of the iron group doped with chromium have high magnetic permeability and low coercive force. Upon the introduction of chromium into an alloy, its corrosion resistance and specific electrical resistance are increased. Films of these materials can be applied in computer and UHF technology. Graphs are given showing the chromium content in percent and the coercive force of the films as a function of film thickness. With an increase in the film thickness to 2000 Å, there is a considerable rise in the

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IL'YUSHENKO, L. F., and BOLTUSHKIN, A. V., Izvestiya Akademii Nauk BSSR, Seriya Fiziko-Matematicheskikh Nauk, No 6, 1970, pp 125-128

coercive force and then a gradual drop to a certain constant value. This behavior is associated with changes in the composition and structure occurring in the film with an increase in its thickness. The change in the saturation induction and coercive force of films with a thickness of 2000 Å as a function of chromium content was measured and showed that an increase in chromium content leads to a drop in saturation induction. The coercive force of Co-Cr-films rises with an increase in concentration, and in Fe-Cr-films there is first a growth in the coercive force with an increase in concentration and then a smooth drop, beginning with 7-8% Cr. This behavior is attributed to a change in the structure of the alloy.

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Conferences

UDC 621.791.008.1

USSR

ILYUSHENKO, V. M.

"Seminar on New Methods in Welding and Beading in Ship Repair"

Kiev, Avtomaticheskaya Svarka, No 1, Jan 72, p 76

Abstract: A brief review is given of some of the 38 reports and communications at the Third All-Union Seminar on New Methods in Welding and Beading in Ship Repair, held in Klaypeda, 7-10 September 1971. The Seminar was sponsored by the Black Sea Central Planning and Design Office, the Klaypeda Experimental Ship Repair Plant, and the Lithuanian Maritime Steamship Company. More than 100 delegates from various enterprises participated. The seminar was opened by V. Yu. Catin, Chief Engineer of the Lithuanian Steamship Company. N. A. Kronik reported on the state of welding production at ship repair plants of the Ministry of the Maritime Fleet USSR. L. N. Kopotman reported on welding and beading mechanizations at river fleet plants, B. A. Tsvetkov reported on the use of shot-arc-welding, S. R. Frumin and B. L. Koytikh discussed the use of PP-AN106 and PP-AN125 powder wires, and V. Ye. Sayenko discussed the welding of slag-refined brand S shipbuilding steel. D. P. Bakhtiarov reported on the use of high-efficiency ANO-9 electrodes and Ye. G. Kipernik reported on welding with thick-coated electrodes and ceramic rods. A series of reports dealt with welding and beading of copper alloys,

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ILYUSHENKO, V. M., Avtomaticheskaya Svarka, No 1, Jan 72, p 76

including the Br.AM$_{ts}$ 9-2 and Br.CTs10-2 bronzes. A number of reports dealt with beading problems.

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Acc. Nr.: AP0046764 Ref. Code: UR0125

USSR UDC 621.791.927:669.35.6

ILYUSHENKO, V. M., SEDOV, V. YE., MAMYKIN, E. T., YUGA, A. I.

"Antifriction Properties and Wear Resistance of Hard-Faced Tin-Lead Bronze"

Kiev, Avtomaticheskaya Svarka (Automatic Welding), No 1, 1970, pp 28-31 (from Avtomaticheskaya Svarka, No 1, 1970, p 79)

Translation: This article contains a study of the wear resistance and coefficient of friction of hard-faced tin-lead bronze. The optimal composition of the antifriction alloy for manufacturing bimetal highly loaded bearings is selected. There is 1 table, 5 illustrations and a 5-entry bibliography.

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USSR

IL'YUSHENKO, V. P.

"Boundary Testing of Constituent Logic Elements and Circuits"

Avtomatika i Vychisl. Tekhn. [Automation and Computer Technology], 1972, No 5, pp 38-43 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1975, Abstract No 4V462, by A. Sapozhenko).

Translation: A method is suggested for testing actual physical elements realized by conjunctions such as $x_1^{\sigma} \& x_2^{\sigma 2} \& \ldots \& x_n^{\sigma n}$, where $\sigma_i \in \{0,1\}$ $(i = 1,\ldots, n)$, $x^0 = \bar{x}$, $x^1 = x$. It is demonstrated that the checking test consists in this case of the set $\sigma_1, \sigma_2, \ldots, \sigma_n$ and all sets adjacent to it.

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USSR

UDC: 539.374

IL'YUSHIN, A. A., Corresponding Member of the USSR Acadamy of Sciences; MOVLYANKULOV, Kh.; SUNCHALIYEV, R. M.; and FILATOV, A. N.

"Some Methods for Investigating Nonlinear Problems in Viscous-Elasticity Theory"

Doklady Akademii Nauk SSSR, vol 206, No 1, 1972, pp 59-61

Abstract: The authors find a simplified form of the general equations for the nonlinear theory of viscous-elasticity by eliminating the inertial term, thus obtaining an equation which describes quasi-static problems of the theory. They consider that this simplified form is reduced to a system of ordinary integrodifferential equations by the straight-line or Bubnov-Galerkin methods and show how these equations can be averaged for solving dynamic problems in nonlinear viscous-elasticity theory. They show also how the "freezing" method can be used to investigate integral equations which arise in quasi-static problems of the theory. They are associated with the Cybernetics Institute and Computer Center, Uzbek Academy of Sciences, at Tashkent.
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1/2 040 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--STATISTICAL TREATMENT OF RESULTS OF SOME RADIOBIOLOGICAL EXPERIMENTS USING A COMPUTER -U-
AUTHOR-(03)-ZHELEZNYAKOVA, N.YU., ZAKHAROV, I.A., ILYUSHIN, S.A.

COUNTRY OF INFO--USSR

SOURCE--RADIOBIOLOGIYA 1970, 10(1), 153

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CIRC ACCESSION NO--AP0121139
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STATISTICAL TREATMENT OF THE RESULTS OF RADIOBIOL. EXPTS., USING A COMPUTER FOR THE CALCN. OF THE DOSE EFFECT PARAMETERS IS DISCUSSED. THE SURVIVAL RATE OF CHLORELLA CELLS AFTER TREATMENT WITH VARIOUS DOSES OF UV RAYS IS GIVEN IN AN EXAMPLE. FACILITY: FIZ.-TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

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USSR

UDC 620.179.15

GERSHBERG, M. V., ZELENKOV, A. L., ILYUSHIN, S. V., PERVITSKIY, Yu. D., RUDAKOV, V. N.

"The RT-68 Radiation Defectoscope"

Defektoskopiya, No 4, 1971, pp 115-121.

Abstract: A description is presented of the RT-68 commercial radiation defectoscope, designed for testing of glass reenforced plastic pipe and other types of pipe of similar dimensions. The defectoscope operates by the principle of mechanical scanning of the probe device, producing a visual picture of the distribution of defects. The device consists of the probe device with its lines, intermediate frequency amplifiers and power supply, the scanning mechanism of the probe device and the defect recording system, consisting of the visualization unit and beam scanning sensors. A block diagram and photograph of the device are presented.

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AP0024229

UR 9023

AUTHOR-- IL,YUSHIN, V., MASTER OF SPORTS

TITLE-- SMALL ARMS DESIGNER

NEWSPAPER-- SOVETSKIY PATRIOT, FEBRUARY 18, 1970, P 4, COLS 2-6

ABSTRACT-- P. A. SOLOV,YEV, 60, HAS BEEN AWARDED THE TITLE OF THE "MERITORIOUS INVENTOR OF THE R.S.F.S.R.". SOLOV,YEV IS A WELL-KNOWN DESIGNER WHO, IN 1935, DEVELOPED THE FIRST SOVIET SMALL-CALIBER PISTOL. HE IS ALSO GIVEN CREDIT FOR CONTRIBUTING TO THE DEVELOPMENT OF THE SIGHT FOR TOZ-10, A SMALL CALIBER RIFLE.

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USSR

ILYUSHIN, V. F., Central Asian Branch of the All-Union Planning, Surveying and Scientific Research Institute imeni S. Ya. Zhuk, and Gal'Perin, R. S., All-Union Planning, Surveying and Scientific Research Institute imeni S. Ya. Zhuk

"Erosion Behind the Outlet of the First-Level Construction Tunnel of the Nureysk Hydroelectric Power Plant"

Moscow, Gidrotekhnika i Melioratsiya, No 3, Mar 73, pp 8-9

Abstract: From the start of the operation of the first-level construction tunnel in March 1966 to September 1970, the total runoff through the tunnel was about 95 km^3, and the sediment runoff of the river was about 350 million tons. The maximum depth of the erosion trench was 12-14 m; the width of the runoff channel increased by a factor of 2.5-3, and now equals 200 m. Whereas the shape and structure of the tunnel outlet were properly designed for its satisfactory operation, placement of the tunnel with emission of the stream to the opposite bank, dictated by geologic and topographic conditions, brought about considerable erosion of the opposite bank and deposition of the erosion products in the river bed. This will require a considerable amount of clean-up operations in the outlet channel of the hydroelectric power plant. 1 figure.
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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

USSR

ILYUSHIN, V. F., Engineer, Central Asian Branch of the All-Union Planning, Surveying and Scientific Research Institute imeni S. Ya. Zhuk

"River Flow Diversion During Construction of the Nureysk Headworks"

Moscow, Gidrotekhnika i Melioratsiya, No 3, Mar 73, pp 4-8

Abstract: In planning the construction of the Nureysk headworks, the complexity of the flow-control requirements during construction, as well as the difficult geologic conditions at the end sectors of the tunnels, made it necessary to adopt a multilevel system of river-flow diversion during construction. The stages of construction of the system are described. With a relatively insignificant cost increase in comparison to a single-level system, the multilevel system of river-flow diversion permits periodic inspection and repair of the tunnels. The tunnels can be built with a lower degree of capital input, and they can be shut off as they wear out. 3 figures. 1 table.

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USSR

UDC 517.946

IL'YUSHINA, G. A.

"Generalized Principle of Localized Spectral Expansion Connected With the Beltrami Operator and Specified in an Arbitrary N-Dimensional Region"

Minsk, Differentsial'nyye Uravneniya, vol. 7, No. 11, November 1971, pp 2058-2065

Abstract: This paper is based in part on an earlier article (V. A. Il'in, 6, No. 8, 1970) published in the same journal, which established the generalized principle of the localization of Riesz averages of the order of $s>0$ for an arbitrary self-conjugate nonnegative extension of the Laplace operator Δ in an arbitrary N-dimensional region G. The present paper considers the differential operator

$$Lu = \frac{1}{\sqrt{g}} \sum_{i,k=1}^{N} \frac{\partial}{\partial x_k} \left(g^{ik} \sqrt{g} \frac{\partial u}{\partial x_i} \right),$$

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IL'YUSHINA, G. A., Differentsial'nyye Uravneniya, vol. 7, No. 11, November 1971, pp 2058-2065

in which $g^{ik} = g^{ki}$ are coefficients specified in the region G and which belong to $C^{\infty}(G)$; the value of $1/g$ is essentially the positive determinant of the positively defined matrix $\|g^{ik}\|$. The assumption is made that the quadratic form

$$ds^2 = \sum_{i,k=1}^{N} g_{ik} dx_i dx_k, \quad g^{ik} g_{kj} = \delta^i_j$$

generates a symmetrical Riemann space. The author is associated with the M. V. Lomonosov Moscow State University.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

ILYUSHKO, N. A.

Space Physiology

ORIGINAL ARTICLES

SPACE BIOLOGY

SO: JPRS 54396
03 Nov 1971

UDC 612.2-06:612.766.2

EFFECT OF HYPODYNAMIA ON GAS EXCHANGE IN ANIMALS (All-space physiology)

6316121 6312581

[Article by Ye. A. Kovalenko, V. L. Popkov, E. S. Mailyan, Yu. S. Galushko, N. V. Gordeycheva, Yu. I. Kondrat'yev, N. A. Ilyushko, A. N. Poptanov, L. N. Grinberg and M. A. Seydaretov; Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 5, No 4, pp 3-8, 1971, submitted for publication 8 December 1969]

6309762

Abstract: This paper reports on investigations of the pathogenesis of prolonged hypokinesia (up to 100 days), including total gas exchange, gas homeostasis in tissues, rate of in vivo oxygen consumption in muscles (polarographic method), tissue respiration and oxidative phosphorylation in the skeletal muscles, myocardium, brain and liver, as well as oxidative processes in liver mitochondria. The weight of the animals and individual skeletal muscles of the limbs was also examined. On the 120th day of hypokinesia functional (static and dynamic) tests were performed to determine work capacity and acute hypoxia tolerance of animals. During an exposure to 60-day hypokinesia the dogs showed a decrease in gas exchange which was most clearly pronounced by the 30th day. By the end of the experiment gas exchange increased and immediately returned to a normal level after the experiment. Rats exposed to a longer hypokinesia exhibited no noticeable changes in total gas exchange at early stages of the experiment and a distinct acceleration of gas exchange and regional oxygen consumption in muscles by the 90th-100th day. Changes in the oxidative processes in tissues were found during the 30th-60th day of hypokinesia. The rats also revealed substantial weight losses due to a decrease

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USSR UDC 633.57:58.04

IMAMALIYEV, A. I., KOBLOV, R. K., and SEMYKINA, YE. YE., Institute of Experimental Plant Biology, Academy of Sciences Uzbek SSR

"Some Characteristics of the Penetration, Distribution and Transformation of Defoliating Captax Derivatives in Cotton Plants"

Tashkent, Uzbekskiy Biologicheskiy Zhurnal, No 2, 1971, pp 19-21

Abstract: In a study of the effect and metabolism of mercaptobenzothiazole (Captax) derivatives as defoliants, three 2-alkylthiobenzothiazoles were synthesized: ethylcaptax, butylcaptax, and heptylcaptax, which had labelled (S^{35}) sulfide sulfur. The specific radioactivity of these compounds was 0.38-0.50 mc/mM. The defoliants were applied to cotton of the 108-F type in the concentional way in the form of a 1% emulsion. The treated leaves were crushed and extracted with diethyl ether and subsequently with a 96% aqueous solution of ethanol. Of the three alkyl derivatives, ethylcaptax exhibited the greatest capability of penetrating the cotton plant leaves, whereas heptylcaptax was the least effective in this respect. No unchanged butylcaptax was found in seeds and fibers of immature pods. Apparently there are barriers impeding the appearance of the next transformation product of butylcaptax in 1/2

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USSR

IMAMALIYEV, A. I., et al., Uzbekskiy Biologicheskiy Zhurnal, No 2, 1971, pp 19-21

the ripening fruit. However, this product penetrates into the seeds and fibers when the defoliant hits the pods. The butylcaptax entering the leaves is quickly transformed. It appears that the metabolism of all three alkyl derivatives of captax in the cotton plant is identical with retention of the benzothiazole moiety in the molecule.

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UDC 615.361.014.41

USSR

IMAMALIYEV, A. S.

Zagotovka i Konservatsiya Tkaney Oporno-Dvigatel'nogo Apparata (Preparation and Preservation of Tissues of the Support-Motor Apparatus), Moscow, "Meditsina," 1970, 224 pp.

Translation:

Annotation: Two basic problems connected with transplantation are elucidated in the monograph: preparation and preservation of tissues and their clinical utilization in orthopedics and traumatology.

A brief historical survey of attempts to preserve human tissues and utilize them for clinical purposes is given.

Experience gained in obtaining human tissues at the TsITO [Central Scientific Research Institute of Traumatology and Orthopedics] and other establishments is cited. The statutes on obtaining tissue from bodies of recently deceased people, forensic medical expertise, medical permission for obtaining tissues, the sources of preparation, and posthumous changes in cadaver tissues are elucidated.

Methods and forms of preservation currently being applied in tissue preservation laboratories are described. Experimental investigations characterize

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IMAMALIYEV, A. S., Meditsina, 1970, 224 pp.

preservation methods, periods of preservation, and their biological activity.

Opinions on the role of laboratory tissue preservation in the development of plastic surgery are given.

The second section of the monograph deals with clinical and experimental investigations on prolonging the periods of tissue preparation, various preservation methods, and study of the properties of tissues sterilized by physical and chemical means.

Ways of prolonging periods of tissue preparation by preserving the special donor at a low temperature are experimentally established. A comparative evaluation of tissues preserved by different methods established the advantage of each of the methods when used in one case or another.

The history of the problem of the clinical utilization of homologous tissues is dealt with very briefly in the clinical section of the monograph.

General characteristics of tissues clinically utilized, their bacteriological characteristics, and determination of their behavior with the aid of clinical-laboratory tests and x-ray data are provided.

The operations in which preserved tissues, skin, bones, cartilage, joints, tendons, nerves, fasciae, and others are described here also. An attempt is made to throw some light on the broad potentials of utilization of preserved tissues.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

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IMAMALIYEV, A. S., Meditsina, 1970, 224 pp.

The vast Russian and foreign literature on this problem is cited.

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IMAMALIYEV, A. S., Meditsina, 1970, 224 pp.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

USSR

UDC 632.96

UMAROV, A. A., ROZHKOVA, N. K., IMAMALIYEVA, A. I., ZAKIROV, T. S., LOY, N. P., MIRAKHDAROV, KH., Institute of Chemistry of Plant Substances, Academy of Sciences of the Uzbek SSR

"A Defoliant"

USSR Author's Certificate No 325967, filed 23 Sep 70, published 25 Feb 72 (from RZh-Khimiya, No 22, Nov 72, Abstract No 22N479 P)

Translation: A defoliant is proposed which contains $Mg(CO_3)_2$. The herbicide is distinguished by the fact that the severity of its effect is reduced by using 2-butylthiobenzthiazole (butylcaptax). The $Mg(CO_3)_2$ and butylcaptax are taken in a ratio of 1:1 or 2:1. The proposed mixture is tested for defoliating the thin-fiber grade of cotton plant. Application is done in the phase when 4-5 bolls have opened. On the 12-th day, leaf fall-off reached 82.5-93.7%; dry leaf content was 1.8%. T. A. Belyayeva.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

USSR UDC 616.988.73-08-084(479.24)

IMAMALIYEVA, G. M., ABUSHEV, F. A., GEZALOVA, F. A., and KAKHRAMANOV, T. B., NIIVMiG imeni G. M. Musabektov and Chair of Infectious Diseases, Azerbaydzhan State Medical Institute imeni N. Narimanov

"The Clinico-Epidemiological Characteristics of Ornithosis in Baku"

Baku, Azerbaydzhanskiy Meditsinskiy Zhurnal, Vol 50, No 3, Mar 73, pp 54-58

Abstract: Serological tests carried out on 3824 patients with various diseases in Baku during 1966-71 showed that 342 of them (8.99%) had been infected with ornithosis. Similar tests on 336 healthy persons (blood donors) indicated that 5% had been infected with ornithosis. During the period in question, 51 cases of ornithosis were diagnosed among patients treated at hospitals and clinics. Twenty six of the ornithosis patients were men and 25 women. Of the 51 patients, 21 kept pigeons or had some sort of contact with them; 3 kept in their rooms fancy birds such as parrots, canaries, and goldfinches; and 17 had chickens, geese, and ducks. In 10 cases the source of infection could not be established. Of pigeons caught in Baku, 21.4% were infected with ornithosis. Of the ornithosis patients, 62.7% were 30-50 years old, 29.4% younger than 30 years, and 7.8% older than 50 years. As distinguished from Leningrad and Moscow, where most cases of ornithosis are due to infection of persons of post-retirement age from pigeons in squares and parks, the majority of infections in Baku

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IMAMALIYEVA, G. M., et al., Azerbaydzhanskiy Meditsinskiy Zhurnal, Vol 50, No 3, Mar 73, pp 54-58

was among persons of a younger age and was apparently associated with the keeping of pigeons at home. Of the 51 patients 27 had the disease in a mild form, 18 in a moderately severe form, and 6 in an acute form. In cases in which the disease was initially mild, worsening of the health of the patients took place 2-3 months later; the patients had occasional fever, myalgia, insomnia, pain in the joints, and vegetative disturbances at the time of recurrence of the disease. Of 35 cases the histories of which are summarized, all were incorrectly diagnosed in the beginning, although sufficient information on ornithosis had been given to physicians by the medical authorities in Azerbaydzhan. In one case failure to diagnose the disease correctly was responsible for inadequate treatment and the death of the patient. Twenty one of the 35 patients developed pneumonia of various types and 4 sharpening of the lung outline. Some ornithosis patients developed considerable functional and organic changes in the nervous system. Cases of this type, in which the background of infection with ornithosis had not been recognized, were found by the authors in neurological departments of some hospitals.

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UDC 616.981.452-084.47

AGAFONOV, V. I., BABKIN, Ye. I., VDOVIN, D. G., VOROBEYCHIKOV, V. M., VOROB'YEV, A. A., GAMALEYSHKO, Kh. P., GAPOCHKO, K. G., GEFEN, M. Ye., YEVSTIGNEYEV, V. I., YEMEL'YANOVA, O. V., ZEMSKOV, Ye. M., IVANALIYEV, O. G., KANALOV, I. I., KVIRIKADZE, V. V., KUTYREV, P. A., MISNIKOV, O. P., PUSHKAREV, V. P., and ROZDESTVENSKIY, D. A., Military Medical Academy imeni S. M. Kirov, Leningrad

"A Comparative Efficiency Characteristic of Different Immunization Methods Against Plague Infection"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 11, 1972, pp 106-112

Abstract: Analysis of the available literature data led to the conclusion that oral, aerogenic, and jet immunization methods are the most efficient compared with subcutaneous and skin methods. The average number of patients inoculated against plague infection was 517, 817 (419), and 937 per hr for jet injectors, aerogenic method liquid and dry vaccine, and oral method (tablets), respectively, compared with only 43 and 28 for the subcutaneous and skin methods, respectively.

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USSR UDC 612.438+612.13]:612.017.1

KOVALEV, I. Ye., SERGEYEV, P. V., and IMAMBAYEV, S. Ye., Second Moscow Medical Institute imeni Pirogov

"The Blood' Thymus Barrier and Immunological Reactivity of the Organism"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 5, May 71, pp 85-90

Abstract: Literature data on the morphology and function of the blood-thymus barrier are analyzed, and experimental results on this controversial problem are presented. Since intravenous injections of spleen homogenates from donor rabbits into rabbits which are recipients of skin grafts did not suppress tissue rejection but simular intrathymus injections did suppress the tissue rejection reaction, the conclusion is drawn that the thymus participates in immunological reactions. It was also concluded that antigens in sufficiently high concentrations penetrate the blood-thymus barrier.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

USSR UDC: 537.226.31:546:23

ABDULLAYEV, G. B., Corresponding Member of the Academy of Sciences, USSR; IMANOV, L. M.; RASULOVA, M. A.

"Investigating Dielectric Relaxation in Selenium"

Baku, Doklady Akademii Nauk Azerbaydzhanskoy SSR, vol 28, No 5, 1972, pp 20-24

Abstract: Asserting that investigation of the dielectric characteristics of semiconductors within broad limits of frequency and temperature variation can turn up useful information concerning the nature of weakly bonded charge carriers, the authors present the results of their investigation into the dielectric relaxation of partially crystallized selenium and selenium specimens doped with thallium. The dielectric permeability and absorption factor of the pure selenium were measured at five frequencies in the range of 0.06 to 5.3 MHz and in the temperature interval of 20 to -100° C.

The dielectric coefficients of the selenium doped with 0.01% by weight of thallium were measured in the same temperature interval at eight frequencies in the 0.06-16 MHz range. The measurements were conducted by resonance methods with an error of less than 5%. Results are given in tabular and curve form.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

1/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--DETERMINATION OF THE CRYSTAL STRUCTURE OF GE SUB3 BI SUB2 TE SUB6 -U-

AUTHOR--PETROV, I.I., IMANOV, R.M.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(1) 168-70

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CRYSTAL STRUCTURE, TELLURIDE, GERMANIUM COMPOUND, BISMUTH COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0016 STEP NO--UR/0070/70/015/001/0168/0170

CIRC ACCESSION NO--AP0102116

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

2/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102116

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE OF GE SUB3 BI SUB2 TE SUB6 WAS STUDIED BY ELECTRON DIFFRACTION. THE D. OF GE SUB3 BI SUB2 TE SUB6 IS 7.15 G-CM PRIME3. THE INTERAT. DISTANCES IN GE SUB3 BI SUB2 TE SUB6 ARE GE-TE 3.00-3.01, BI-TE 3.01-3.02, AND TE-TE 3.52 AND 4.21 ANGSTROM. A MODEL OF THE GE SUB3 BI SUB2 TE SUB6 STRUCTURE DERIVED FROM THE EXPTL. DATA IS GIVEN. THE STRUCTURE IS LAMINAR WITH THE ELEMENTARY UNIT CONSISTING OF AN 18 LAYER RHOMBOHEDRAL PACKING OF TE ATOMS WITH THE GE AND BI ATOMS OCCUPYING FIVE SIXTHS OF THE OCTAHEDRAL VOIDS.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

1/2 024 UNCLASSIFIED PROCESSING DATE--13SEP70

TITLE--NEW EXPERIMENTAL DATA ON THE PROCESSES OF ORDERING IN COMPLEX STRUCTURES -U-

AUTHOR--PINSKER, Z.G., IMAMOV, R.M., KHITROVA, V.I.

COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(1), 124-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--ORDERED ALLOY, TRANSITION METAL, TRANSITION METAL OXIDE, THERMAL DIFFUSION, SEMICONDUCTOR ALLOY, ELECTRON DIFFRACTION ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1342 STEP NO--UR/0185/70/015/001/0124/0126

CIRC ACCESSION NO--AP0127415
UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

2/2 024 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107815

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ORDERING PROCESS IN BINARY AND TERNARY TRANSITION METAL SYSTEMS WERE STUDIED BY USE OF ELECTRON DIFFRACTION. TRANSITION METAL OXIDES UNDERGO CONCN. ORDERING, WHICH OCCURS SEP. FOR METAL AND O SUBLATTICES. TEMP. ORDERING OCCURS IN BINARY AND TERNARY SEMICONDUCTOR SYSTEMS (LIKE AG OR CU CHALCOGENIDES (E.G. CUASSE SUB2).

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

1/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--CRYSTAL CHEMISTRY OF SEMICONDUCTORS WITH OCTAHEDRAL AND MIXED COORDINATION OF ATOMS -U-
AUTHOR-(03)-IMAMOV, R.M., SEMILETOV, S.A., PINSKER, Z.G.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 287-93

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--CRYSTAL, SEMICONDUCTOR MATERIAL, GERMANIUM, TIN COMPOUND, LEAD COMPOUND, BISMUTH COMPOUND, SELENIUM COMPOUND, TELLURIUM COMPOUND, TELLURIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0908 STEP NO--UR/0070/70/015/002/0287/0293

CIRC ACCESSION NO--AP0116418
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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

2/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0116418
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CRYSTAL STRUCTURES WERE ANALYZED FOR A NO. OF TERNARY SEMICONDUCTING COMPDS. FORMED IN THE PSEUDOBINARY SYSTEMS MA PRIMEVI X PRIMEVI NB SUB2 X SUB3 PRIMEVI (A EQUALS GE, SN, AND PB; B EQUALS SB AND BI; X EQUALS SE AND TE). IN ALL OF THESE COMPDS. OCTAHEDRAL COORDINATION WAS FOUND FOR THE ATOMS, AND THEIR STRUCTURES ARE INTERMEDIATE BETWEEN BI SUB2 TE SUB3 AND PBTE (NACL). THE CUBIC PACKING OF THE DIFFERENT TYPES OF ATOMS IS CHARACTERISTIC FOR THE STRUCTURE OF THE STARTING BINARY COMPDS. AND IT IS RETAINED IN THE TERNARY PHASES ALSO. THE LATTICE PARAMETERS FOR THE TERNARY COMPDS. ARE RELATED TO THE PARAMETERS OF THE BINARY COMPDS. BY SIMPLE EXPRESSIONS. ANALOGOUS RELATIONS WERE ALSO OBSD. FOR TERNARY PHASES WITH A MIXED COORDINATION FOR THE ATOMS. THESE FORMULAS CAN BE USED TO DET. THE PERIODS FOR ANY OF THE INTERMEDIATE STRUCTURES. THE TOTAL NO. OF LAYERS IS DETD. BY THE EXPRESSION N EQUALS Z(2M PLUS 5N), WHERE Z IS THE NO. OF FORMULA UNITS PER UNIT CELL OF THE TERNARY SYSTEM.
FACILITY: INST. KRISTALLOGR., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

1/2 007 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--RATE OF BORATE DISSOLUTION IN ACETIC ACID SOLUTIONS -U-

AUTHOR-(02)-IMAMUTDINOVA, V.M., ABDRASHITOVA, N.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 452-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BORATE, ACETIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0286 STEP NO--UR/0080/70/043/002/0452/0455

CIRC ACCESSION NO--AP0113216

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

2/2 007 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0113216

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RATES OF DISSOLN. A OF B SUB2 O SUB3, HYDROBORACITE, COLEMANITE, ULEXITE, AND CALCITE IN 1-70 WT.PERCENT AQ. ACOH AT 25, 50, 75, AND 95DEGREES WERE MEASURED. THE PLOTS OF A VS. ACOH CONCN. SHOW MAX. AT 10-20 WT.PERCENT ACOH AND COINCIDE WITH THOSE FOUND FOR THE DISSOLN. OF THE BORATES IN H SUB2 SO SUB4, HCL, HNO SUB3, H SUB3 PO SUB4, AND HCLO SUB4. THE FOLLOWING VALUES OF THE TEMP. COEFFS. OF THE RATE OF DISSOLN. FOR THE ABOVE MINERALS ARE: AT 25-35DEGREES, 1.61-1.67, 1.49-1.65, 1.55-1.75, 1.43-1.74, 1.34-1.53; AT 85-95DEGREES, 1.40-1.42, 1.32-1.42, 1.35-1.47, MINUS, 1.23-1.35, RESP. THE VALUES OF THE ACTIVATION ENERGIES OF DISSOLN. E SUBGAMMA ARE: AT 25-50DEGREES, 8.90-10.60, 9.01-12.50, 7.87-12.30, 6.53-10.15, 6.81-11.21; AT 50-75DEGREES, 8.14-9.58, 5.97-9.35, 5.07-10.92, 7.75-9.68, 3.19-6.18; AT 75-95DEGREES, 6.37-8.96, 4.35-8.27, 6.32-9.47, MINUS, 3.33-4.61 KCAL-MOLE. THE DISSOLN. PROCESS IS ASSUMED TO BE DIFFUSIONAL IN CHARACTER.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

1/2 015 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--SOLUBILITY ISOTHERM FOR THE ZINC SULFATE AMMONIUM SULFATE POTASSIUM SULFATE WATER QUATERNARY SYSTEM AT 25DEGREES -U-
AUTHOR-(02)-KYOYRGANOV, A., IMANAKUNOV, B.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3), 685-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--PHASE DIAGRAM, AQUEOUS SOLUTION, INORGANIC SALT, ZINC COMPOUND, POTASSIUM COMPOUND, AMMONIUM SULFATE, SOLUBILITY, ISOTHERM, MULTICOMPONENT CHEMICAL MIXTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0958 STEP NO--UR/0080/70/043/003/0685/0687

CIRC ACCESSION NO--AP0131543
UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

CIRC ACCESSION NO--AP0131543

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PHASE DIAGRAM IS GIVEN FOR THE TITLE QUATERNARY SYSTEM AT 25DEGREES. IN THE SYSTEM CONTG. ZN 31.29, NH SUB4 2.20, AND K 2.52 WT. PERCENT (PRESENT AS SULFATES) IN THE AQ. PHASE, THE SOLID PHASE IS FORMED BY A MIXT. OF ZNSO SUB4 7H SUB2 O AND ZHSO SUB4 (NH SUB4) SUB2 SO SUB4 6H SUB2 O (A) AND A COMPD. OF VARIABLE COMPN., VIZ., KZNSO SUB4.LK SUB2 SO SUB4.M(NH SUB4) SUB2 SO SUB4.NH SUB2 O (B). A MIXT OF A AND B IS IN EQUIL. WITHSOLN., THE COMPN. OF WHICH VARIES IN THE RANGE ZN 20.55-8.02; NH SUB4 4.98-9.82; K 1.54-0.36 WT. PERCENT. THE AQ. SOLNS. WITH ZN 1.87-13.30, NH SUB4 5.9?-1.98, AND K 18.16-6.22 WT. PERCENT ARE IN EQUIL. WITH A MIXT. OF B AND ZNSO SUB4 K SUB2 SO SUB4 6H SUB2 O. THE SYSTEMS WITH ZN 0.24-0.79, NH SUB4 42.26-29.04, AND K 13.64-14.86 WT. PERCENT IN THE AQ. PHASE ARE IN EQUIL. WITH A MIXT. OF SOLID B AND A SALT OF VARIABLE COMPN., VIZ., KL SUB2 SO SUB4 M(NH SUB4) SUB2 SO SUB4. FACILITY: KIRG. GOS. SEL'SKOKHOZ. INST., FRUNZE, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

1/2 015 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--QUATERNARY SYSTEM OF COBALT, AMMONIUM, AND POTASSIUM SULFATES AND WATER AT 25, 50, AND 75DEGREES -U-
AUTHOR-(03)-BORBIYEVA, D., IMANAKUNOV, B., DRUZHININ, I.G.

COUNTRY OF INFO--USSR

SOURCE--IAV. AKAD. NAUK KIRG. SSSR 1969, (3), 64-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AQUEOUS SOLUTION, MULTICOMPONENT SYSTEM, PHASE DIAGRAM, SOLUBILITY, SOLID SOLUTION, CRYSTALLIZATION, AMMONIUM SULFATE, SULFATE, POTASSIUM COMPOUND, COBALT COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0767 STEP NO--UR/0560/69/000/003/0064/0068

CIRC ACCESSION NO--AP0104213
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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

2/2 015 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104213

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE QUATERNARY SYSTEM COSO SUB4 MINUS (NH SUB4) SUB2 SO SUB4 MINUS K SUB2 SO SUB4 MINUS H SUB2 O WAS STUDIED BY THE ISOTHERMAL SOLY. METHOD. SEVEN CRYSTN. FIELDS OF THE SALTS WERE DETD.: THOSE OF THE INITIAL COMPONENTS, COSO SUB4 .7H SUB2 O (25DEGREES), COSO SUB4 .6H SUB2 O (50DEGREES), COSO SUB4 .H SUB2 O (75DEGREES), K SUB2 SO SUB4, AND (NH SUB4) SUB2 SO SUB4; THOSE OF BINARY COMPDS., COSO SUB4 .K SUB2 SO SUB4 .6H SUB2 O AND COSO SUB4 .(NH SUB4) SUB2 SO SUB4 .6H SUB2 O; THAT OF THE BINARY SOLID SOLN. BETWEEN K SUB2 SO SUB4 AND (NH SUB4) SUB2 SO SUB4; AND THAT OF THE COMPD. KCOSO SUB4 .L(NH SUB4) SUB2 SO SUB4 .MK SUB2 SO SUB4 .NH SUB2 O. THE EFFECT OF TEMP. ON THE SOLY. OF THE SALTS, BINARY COMPDS., AND SOLID SOLNS. WAS DETD., AND THE DEPENDENCE OF THE AREA OF THE CRYSTN. FIELDS ON THE SOLYS. ARE PRESENTED. THE SOLYS. OF THE INITIAL COMPDS. AND OF THE BINARY SOLID SOLN. DECREASE WITH INCREASING TEMP. WHILE THAT OF THE BINARY COMPDS. INCREASES. THE SYNTHESIS OF COMPLEX SOLID SOLNS. OF CO, K, AND AMMONIUM SULFATES IN BEST AT LOW TEMPS.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--STABILITY OF MOTION OF A BODY OF VARIABLE MASS CONTAINING CAVITIES ENTIRELY FILLED WITH A FLUID -U-
AUTHOR-(02)-IMANBAYEVA, L.KH., SAPA, V.A.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK KAZAKHSKOI SSR, IZVESTIIA, SERIIA FIZIKO MATEMATICHESKAIA, VOL. 8, JAN.-FEB. 1970, P 66-69
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MOTION STABILITY, MOTION EQUATION, ROTATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1498 STEP NO--UR/0361/70/008/000/0066/0069

CIRC ACCESSION NO--AP0118485
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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

2/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0118485
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DERIVATION OF SUFFICIENT CONDITIONS OF STABILITY OF MOTION OF A SOLID BODY OF VARIABLE MASS CONTAINING CAVITIES ENTIRELY FILLED WITH AN IDEAL FLUID ABOUT A STATIONARY POINT. USING AMINOV'S (1959) METHOD, CONDITIONS ARE OBTAINED UNDER WHICH THE SOLUTION TO THE EQUATIONS FOR THE ROTATION OF THE BODY ABOUT AN AXIS OF SYMMETRY IN A VERTICAL POSITION WILL BE STABLE ACCORDING TO THE WELL KNOWN THEOREM OF LIAPUNOV CONCERNING STABILITY.

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USSR UDC 542.91:661.183.123.3

YERGOZHIN, E. E., RAFIKOV, S. R., IMANBEKOVA, S. M., ZHUBANOV, B. A., Institute of Chemical Sciences of the Academy of Sciences of the Kazakh SSR and the Institute of Chemistry of the Bashkir Branch of the USSR Academy of Sciences

"Synthesis of New Anion Exchange Resins Based on Polyethylenepolyamine and bis(chloromethyl)-diphenyloxide"

Moscow, Izvestiya Akademii Nauk SSSR -- Seriya Khimicheskaya, No 11, 1972, pp 2609-2612

Abstract: A study was made to synthesize anion exchange resins based on polyethylenepolyamine (PEPA) and bis(chloromethyl)diphenyl ether. The condensation of 4,4-bis(chloromethyl)diphenyloxide with PEPA was first carried out at a reduced temperature (0-3°, 30-40 minutes) and then at 20-25° to gelatination. The gel formed was congealed in a dessicator at 70° for 20 hours and at 120° for 30 hours. The anion exchange resin obtained was chrushed, screened and separated into a fraction with grain sizes of 0.25-0.50 mm. The properties of the synthesized ion exchange resins depend to a significant degree on the mole ratio of the chloromethylated diphenyloxide and PEPA and also on their condensation conditions. Comparative data are 1/2

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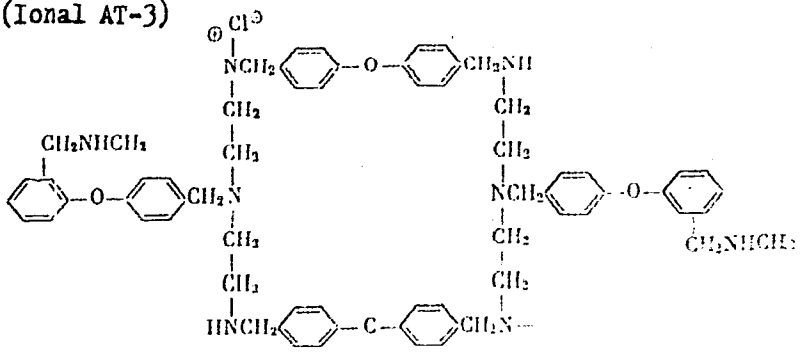
YERGOZHIN, E. E., et al., Izvestiya Akademii Nauk SSR - Seriya Khimicheskaya, No 11, 1972, pp 2609-2612

tabulated. The results of studying the chemical stability of the anion exchange resins with respect to HNO_3, NaOH and H_2O_2 solutions are tabulated.

They indicate that Ional AT-3 appreciably simplifies the process of obtaining the ion exchange resin since it does away with the necessity for separating the isomers. Chemical analysis combined with the infrared spectra considering the mechanism of the interaction of aliphatic amines with chloromethylated aromatic hydrocarbons indicates the following structure of the synthesized anion exchange resins (Ional AT-3)



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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

USSR UDC 576.851.1

FAYZULINA, S. I., KHANBUYEV, Ts. Ts., IMANOV, E. D., GUSEV, B. N., and MAKAROVA, Ye. V., Institute of Biochemistry and Physiology, Academy of Sciences Kirgiz SSR

"Dynamics of Development of Negative Colonies of the Virus of Contagious Ecthyma (Sheep Pox) in Cell Cultures"

Frunze, Izvestiya Akademii Nauk Kirgizskoy SSR, No 1, Jan/Feb 72, p 51

Abstract: Upon infection with the virus of contagious ecthyma or sheep pox (culture strains A and MK), monolayer cell cultures of the skin and kidney of sheep embryos, and the kidney epithelium of adult sheep grown on Hanks medium were treated with an agar solution, so that an agar coating formed and negative colonies (plaques) were observed in tissue cultures. The plaques had a round shape. After staining with methylene blue, degenerated and enlarged intensively stained cells were observed along the edges of the plaques, while in the central section of the plaques, only stained debris of destroyed cells were detected. In cultures of skin and kidney cells of sheep embryos, macroscopically visible plaques appeared on the 4th to 5th day of incubation. The maximum number of plaques not exceeding 1 mm in diameter had formed up to that time. Subsequently, the number of plaques increased at an insignificant

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

USSR

FAYZULINA, S. I., et al., Izvestiya Akademii Nauk Kirgizskoy SSR, No 1, Jan-Feb 72, p 51

rate, reaching an upper limit on the 9-10th day of cultivation. In cultures of adult sheep kidney cells, the maximum number of plaques (60-70%) had formed on the 5-7th day. Their diameter was $\leq$ 1 mm at that time. The number of plaques reached an upper limit on the 10-12th day. Their maximum diameter was 4-5 mm on the 10th day of cultivation.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

USSR UDC 621.775.24

BERMAN, S.I., ZALESSKIY, V. I., and IMANOV, Kh. I., Moscow Institute of Steel and Alloys, Chair of Pressing and Forging Production

"Briquetting and Pressing of Granules of Aluminum-Based Alloys"

Ordzhonikidze, Tsvetnaya Metallurgiya, No 4, 1971, pp 127-131

Abstract: Differences in compressive forces on upper- and female dies by briquetting and pressing granules of aluminum-based alloys on a vertical hydraulic press with a nominal pressing force of 200 tons were experimentally investigated. The experimental conditions and investigation results are discussed by reference to diagrams showing the installation, typical oscillograms, and compressive forces on dies. It was found that by a briquetting process of granules with a length-to-diameter proportion of 2.4 of the initial charging, quality bricks can be produced with a minimum energy expenditure in cases when the granules are in aluminum vessels and the briquetting is processed with container lubrication. By this method, the compressive force in the female die rises to 70-75% of the punch force. A further increase of the specific pressure does not produce a higher brick density. By pressing bricks 40 mm high and 39 mm in diameter, the maximum compressive force on dies is approximately 70% of the forces when pressing without lubrication. Six illustr., five biblio. refs.
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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

USSR

UDC 621.775.24

BERMAN, S. I., ZALESSKIY, V. I., and IMANOV, KH. I., Moscow Institute of Steels and Alloys, Department of Pressing and Forging

"Influence of Dimensions and Form of Aluminum Alloy Granules on the Properties and Structure of Pressed Semifinished Goods"

IVUZ, Tsvetnaya Metallurgiya, No 2, 1971, pp 123-125

Abstract: This work presents a study of the influence of the dimensions and form of granules produced by centrifugal spraying on the properties and structure of pressed semifinished goods. Granules of needle and circular shape of V96TS alloy were compared with sections cut from an ingot produced by semicontinuous casting. The granules and ingots were then both used to produce bars, the mechanical properties of which were compared. The strength properties of the bars produced from granules were higher than those produced from the ingot, the strength properties of bars from needle-shaped granules being highest of all. These bars were found to have a finer grain structure than the other two types.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

USSR UDC 539.213

IMANOV, L. M., Corresponding Member of the Azerbaydzhan SSR Academy of Sciences, ZUL'FUGARZADE, K. E., AKHUNDOV, A. A., GADZHIYEV, G. A., Institute of Physics, Azerbaydzhan SSR Academy of Sciences

"Investigation of Intramolecular Motions in Some Dialkyl Phthalates by the Method of Polymer Matrix Isolation"

Baku, Doklady Akademii Nauk Azerbaydzhanskoy SSR, Vol 29, No 7, 1973, pp 11-12

Abstract: The paper gives some results of a study of radio-frequency spectra of relaxation absorption in the dimethyl phthalate-polystyrene and di-n-butyl phthalate-polystyrene system with ether content of 20% by weight. The dielectric loss tangents of both systems were measured on eight frequencies ranging from $5 \cdot 10^2$ to $7 \cdot 10^5$ Hz at temperatures from 40 to 150°C. On the basis of analysis with regard to the magnitudes of dipole moments corresponding to the observed dielectric absorption regions for dimethyl and dibutyl phthalates, as well as the spectrum of iodobenzene in the polystyrene matrix with a single absorption region, it is concluded that the low-frequency contribution to the absorption regions is from the motion of individual molecules of the dialkyl phthalates as a whole, while the high-frequency component is due to intramolecular motions.

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1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ROTATIONAL CONSTANTS OF ISOPROPYL ALCOHOL IN THE TRANS CONFORMATION -U-

AUTHOR-(03)-IMANOV, L.M., ABDURAKHMANOV, A.A., YELCHIYEV, M.N.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(2), 251-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MICROWAVE SPECTROSCOPY, PROPANOL, ROTATIONAL SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0810 STEP NO--UR/0051/70/028/002/0251/0253

CIRC ACCESSION NO--AP0119717

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

2/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119717

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ABOUT 1000 LINES WERE IDENTIFIED IN THE MICROWAVE SPECTRUM (11.8-31.4 GHZ) OF GASEOUS ISO,PROH, MEASURED AT MINUS 50DEGREES AND 10 PRIMENEGATIVE3-10 PRIMENEGATIVE2 MM. THE PREFERRED ROTAMER OF IOS, PROH IS THE TRANS FORM WITH THE OH IN THE SYMMETRY PLANE.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

1/2 033 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--INSPECTION PORT AND HIGH PRESSURE MERCURY SEAL FOR STUDYING THE THERMOPHYSICAL PROPERTIES OF SUBSTANCES -U-

AUTHOR-(03)-AKHUNDOV, T.S., SAMBUR, KH.D., IMANOV, SH.YU.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., NEFT GAZ 1970, 13(1), 112-13

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--SEAL, MERCURY, HIGH PRESSURE, PETROLEUM PROPERTY, AROMATIC HYDROCARBON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1219 STEP NO--UR/0152/70/013/001/0112/0113

CIRC ACCESSION NO--AT0133216

UNCLASSIFIED

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UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 033

CIRC ACCESSION NO--AT0133216

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HG WAS DISPLACED WHEN THE PRESSURE WAS INCREASED, PRODUCING CLOSING OR BREAKING OF AN ELEC. CIRCUIT. THE LEVEL OF HG IS OBSD. THE APP. WAS RECOMMENDED FOR DETG. THE D. OF AROMATIC HYDROCARBONS, WATER, AND STEAM IS LESS THAN OR EQUAL TO 300 BARS. FOR PRESSURES IS LESS THAN OR EQUAL TO 600 BARS, THE HG SEAL LEVEL IS DETD. ELEC. SCHEMES OF THE APP. ARE PRESENTED. FACILITY: AZERB. INST. NEFTI KHIM. IM. AZIZBEKOVA, BAKU, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

USSR UDC: 621.396.6:621.315.612

KAL'MENS, N. V., NEYMAN, M. I., IMANOVA, A. A.

"A Water-Emulsion Plasticizer for Extrusion of Clay-Free Ceramic Materials"

USSR Author's Certificate No 268526, filed 5 Aug 68, published 8 Jul 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V376 P)

Translation: A water-emulsion plasticizer is proposed for extrusion of clay-free ceramic materials based on organic binders and oily components. To increase the strength of tubular stock, the plasticizer contains a mixture of oxidized linseed and tranformer oils taken in the following ratios (in parts by weight): oxidized linseed oil 50-70, transformer oil 30-50.

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USSR

UDC 621.311.1:388.98(47+57)

IMAMOVA, M.

"Some Problems of Placement of Power-consuming Production Processes in Central Asia"

Tr. Tadzh. N.-I. Otd. Energ. M-va Energ. i Elektrifik. SSSR [Works of Tadzhik Scientific Research Department, Ministry of Power and Electrification, USSR], 1971, 3, 42-50 (Translated from Referativnyy Zhurnal Elektrotekhnika i Energetika, No 9, 1972, Abstract No 9Ye31, by O. F. Gortinskaya)

Translation: Economically suitable placement of productive forces plays an important role in the building of the material and technical base of communism. Eastern Siberia is the most favorable region for the placement of enterprises requiring large quantities of water or electric power. The regions of Central Asia are also favorable for power-consuming processes from the standpoint of economical utilization of power resources (considering available reserves). Central Asia has the prerequisites for the creation of a large-scale chemical industry complex and power-consuming processes of nonferrous metallurgy. A formula is presented for determination of the effectiveness of placement of production facilities. Central Asia characteristically has an extensive supply of hydroelectric power, petroleum and natural gas. Tables are presented, showing the resources of the republics of Central Asia as to hydroelectric power and the degree of utilization of these resources. Three tables.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

USSR

UDC: 535.35

ANISIMOV, S. I., IVAS, YA. A., ROMANOV, G. S., and KHODYKO, YU. V.

"The Effect of High-Power Radiation on Metals"

Deystviye Izlucheniya Bol'shoy Moshchnosti Na Metally [English version above] Moscow, Nauka Press, 1970, 272 pages

Translation: This monograph presents the results of the principal works on the interaction of intensive radiation with materials and systematically develops concepts concerning the physical processes which they indicate. The most important case of condensed material with high initial absorbtion coefficient and the highest flux of energy achievable at the present time (up to $10^{13} w/cm^2$) is analyzed. The presentation of a number of problems is based on the investigations of the authors themselves. Fourteen tables; 80 figures; 182 biblio. refs.

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USSR

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USSR

ANISIMOV, S. I., et al., Deystviye Izlucheniya Bol'shoy Moshchnosti Na Metally, 1970, 272 pages

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USSR

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USSR

ANISIMOV, S. I., et al., Deystviye Izlucheniya Bol'shoy Moshchnosti Na Metally, 1970, 272 pages

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TITLE--NATURE OF THE BREAKDOWN OF THIN METALLIC LAYERS BY LASER RADIATION
-U-
AUTHOR-(04)-BONCHBRUYEVICH, A.M., IMAS, YA.A., LIBENSON, M.N., SPIRIDONOV, B.N.
COUNTRY OF INFO--USSR

SOURCE--ZHURNAL TEKHNICHESKOI FIZIKI, VOL. 40, MAR. 1970, P. 658, 659

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--METAL FILM, ALUMINUM, LASER RADIATION

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2/2 044 UNCLASSIFIED PROCESSING DATE--20NOV7C
CIRC ACCESSION NO--AP0115272
ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. RESULTS OF THEORETICAL AND EXPERIMENTAL STUDIES OF THE THRESHOLD VALUES OF BREAKDOWN INDUCING LIGHT FLUX DENSITIES DURING THE ACTION OF LASER RADIATION ON THIN METALLIC FILMS. AN EQUATION IS DERIVED FOR THE THRESHOLD DENSITY CORRESPONDING TO THE INITIATION OF BREAKDOWN, I.E., HEATING OF THE SURFACE TO MATERIAL'S BOILING POINT AT ATMOSPHERIC PRESSURE. AT THIS TEMPERATURE, THIN LAYERS ARE TOTALLY DESTROYED AND THICK LAYERS IRREVERSIBLY LOSE THEIR REFLECTIVE PROPERTIES. CALCULATIONS ARE COMPARED WITH MEASURED DATA FOR AN ALUMINUM LAYER DEPOSITED ON A GLAS SUBSTRATE.

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USSR

UDC 535.35

ANISIMOV, S. I., IMAS, Ya. A., ROMANOV, G. S., KHODYKO, Yu. V.

"Action of High-Intensity Radiation on Metals"

Deystviye izlucheniya bol'shoy moshchnosti na metally, Moscow, 1970, "Nauka" Publishing House, Main Editorial Staff for Physicomathematical Literature, 272 pp, 1 r., 04 k, 5000 copies

Abstract: The monograph presents an ordered presentation of fundamental studies on the interaction of intense radiation with matter, and ideas on the physics of the processes that stem from these studies are systematized. The most important and thoroughly investigated case of condensed substances with a high initial absorption coefficient is discussed in detail along with the range of energy flux densities that are achievable at the present time (up to 10^{13} w/cm^2). The presentation of several problems is based on the research of the authors themselves. 14 tables, 80 figures, 182 references.

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ANISIMOV, S. I., et al, Deystviye izlucheniya bol'shoy moshchnosti na metally, Moscow, 1970, "Nauka" Publishing House, Main Editorial Staff for Physiocomathematical Literature, 272 pp, 1 r., 04 k, 5000 copies

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

1/2 041 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THE EFFECT OF VERY POWERFUL RADIATION ON METALS -U-

AUTHOR-(04)-ANISIMOV, S.I., IMAS, YA.A., ROMANOV, G.S., KHODYKO, YU.V.

COUNTRY OF INFO--USSR

SOURCE--(DEYSTVIYE IZLUCHENIYA BOL'SHOY MOSHCHNOSTI NA METALY) MOSCOW. NAUKA. 1970
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TOPIC TAGS--METAL, RADIATION EFFECT, SURFACE PROPERTY

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2/2 041 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AM0123825

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. PREFACE 5. CHAPTER I INTRODUCTION 7. II THE EFFECT ON METALS OF RADIATION FLUX OF SMALL DENSITY 36. III THE DISINTEGRATION OF METALS AT MODERATE DENSITIES OF RADIATION FLUX. THE "THERMAL" MECHANISM OF DISINTEGRATION 71. IV THE HYDRODYNAMICS OF THE DISPERSION OF VAPOR AND THE ABSORPTION OF LIGHT BY THE DISINTEGRATION PRODUCTS 119. V THE EFFECT OF HIGH DENSITY RADIATION FLUX ON THE ABSORBING SUBSTANCES. THE "HYDRODYNAMIC" MECHANISM OF DISINTEGRATION 178. VI THE FORMATION OF HOLES AND THE MELTING OF METAL UNDER THE EFFECT OF INTENSIVE RADIATION 227 LITERATURE 264. SUBJECT INDEX 270. THE MONOGRAPH DEALS WITH THE RESULTS OF BASIC WORKS ON THE INTERACTION OF INTENSIVE RADIATION WITH MATTER, AND SYSTEMATIZES THE CONCEPTS RESULTING FROM THEM CONCERNING THE PHYSICS OF THE PROCESSES. EXAMINED IS THE MOST IMPORTANT CASE, INVESTIGATED IN DETAIL, CONCERNING CONDENSED SUBSTANCES WITH A HIGH INITIAL COEFFICIENT OF ABSORPTION AND AT THE PRESENT EXPERIMENTALLY ATTAINABLE RANGE OF DENSITIES OF THE ENERGY FLOW. (UP TO 10 PRIME13 WATT-CM PRIME2).

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USSR UDC: 519.2

IMEDADZE, T. G.

"On Optimum Planning of an Experiment in the Presence of Several Random Interferences"

Tr. Gruz. politekhn. in-t (Works of the Georgian Polytechnical Institute), 1971, No 5(145), pp 63-69 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V176)

Translation: The author considers a problem of optimum linear filtration of a stationary process. As usual, the integral equation is written out for the weight function which defines the optimum filter, and its solution is given under certain conditions. M. Nevel'son.

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USSR UDC 621.382

AKPEROV, Ya. G., IMENKOV, A. N., TSARENKOV, B. V., YAKOVLEV, Yu. P., "Order of Lenin" Physicotechnical Institute imeni A. F. Ioffe

"A Semiconductor Induction Element"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 10, Apr 73, Author's Certificate No 339248, Division H, filed 3 Aug 70, published 8 Feb 73, pp 194-195

Translation: This Author's Certificate introduces: 1. A semiconductor induction element which is a two-layer semiconductor structure with ohmic contacts. As a distinguishing feature of the patent, the Q of the controlled inductive reactance is sharpened and the range of the working frequency is extended by making the semiconductor structure from two different semiconductive materials of the same conductivity type. One of the layers has a fixed chemical composition with respect to thickness, and the other is a semiconductor of variable chemical composition. The width of the forbidden zone at the boundary of the semiconductor layers is greater than the width of the forbidden zone of the first semiconductor, and it gradually decreases as the ohmic contact is approached. 2. A modification of this element dis-

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. USSR

AKPEROV, Ya. G. et al., USSR Author's Certificate No 339248

tinguished by the fact that the two-layer structure consists of a layer of GaAs and a layer of a solid solution of $Al_xGa_{1-x}As$ of variable composition. On the boundary of the interface between these, X is greater than 0.3; on the boundary between the solid solution and the ohmic contact, X is less than 0.3.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

USSR UDC 621.315.592

TSARENKOV, B. V., AKPILKOV, YA. G., VERESHCHAK, N. I., YEVSTROPOV, V. V., [redacted]ENKOV, A. N., YAKOVLEV, YU. P. Physicotechnical Institute imeni A. F. Ioffe of the USSR Academy of Sciences, Leningrad

"Diode Sources of Red Light made of Variband $Ga_{1-x}Al_xAs$:Si p-n- structures"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 921-925

Abstract: The results of the development and study of the properties of semiconductor sources of red light based on variband $Ga_{1-x}Al_xAs$ p-n-structures alloyed with Si are discussed. These p-n-structures were created by epitaxial growth of a solid solution of $Ga_{1-x}Al_xAs$:Si from a liquid Ga-Al-As-Si solution on an n-Ga-As substrate with cooling; the composition of the $Ga_{1-x}Al_xAs$ epitaxial layer was smoothly varied in the direction of growth so that the width of the forbidden zone decreased from the boundary with the substrate with a gradient of (2-3)·10⁴ ev/micron. The thickness of the p-region in the light diodes was 20-31 microns, and the n-region was 60-70 microns. Radiation was generated perpendicular to the plane of the p-n-junction or through the p-layer or through the n-layer of the p-n-structure.

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UDC 621.315.592

TS[illegible]KOV, E. V., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 921-925

The electric and electroluminescent characteristics of the $Ga_{1-x}Al_xAs$ p-n-structures with an area of 0.5 mm^2 at room temperature are as follows: 1) the forward current increases exponentially with an increase in voltage ($I \sim \exp(qV/\beta kT)$ where $\beta = 1.4$-1.6) to voltages of 1.5-1.6 volts, and then it increases linearly (current cutoff voltage 2.0-2.1 volts); 2) the radiation spectrum consists in only one band with a peak energy of 1.72-1.76 electron volts which does not shift with current variation; 3) with an increase in current the radiated power first increases nonlinearly (to 2 amps/cm^2) and then linearly (to 100 amps/cm^2); 4) the external quantum yield of the radiation is 0.5-0.6 percent for 20 milliamps and 0.6-0.8 percent for 200 milliamps; 5) the characteristic times of the transient electroluminescent processes decrease with an increase in current; they are 200 nanoseconds for small currents and 100 nanoseconds for large currents.

These light sources do not become degraded for at least 1,000 hours of operation with a forward current of 20 milliamps and an ambient temperature of 70°C.

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UDC 621.382.3

USSR

TSARENKOV, B.V., AKPEROV, YA.G., IMENKOV, A.N., YAKOVLEV, YU.P. [Physico-Technical Institute imeni A.F. Ioffe, Academy of Sciences, USSR, Leningrad]

"Temperature Dependence Of Edge Photoluminescence Of n-$Ga_{1-x}Al_xAs$ Solid Solution Epitaxial Layers"

Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 677-681

Abstract: The edge photoluminescence is studied of crystals of n-$Ga_{1-x}Al_x$ ($0 < x \leq 0.4$) in a wide temperature range (77 ÷ 370° K) for determination of the empirical dependences of the energy of the maximum ($h\nu_m$), halfwidth (δ) and the photon flux (Φ) of the edge radiation band, on the temperature T. The photoluminescence spectra of the solid solutions investigated contained only one band. The band was nonsymmetrical: the long-wave slope is steeper than the short-wave. The energy of the maximum of the band is changed from 1.45 to 1.90 e.v. (300° K) as a function of the composition of the solid solution with a change of x from 0.01 to 0.4; $h\nu_m$ is decreased with an increase of the temperature in the interval 77 ÷ 370° K and with temperatures above 100 ÷ 125° K the dependence of $h\nu_m$ on T can be approximated by the straight line $h\nu_m = h\nu_{m0} - \alpha_\nu T$, where $h\nu_{m0}$ is the characteristic energy resulting from extrapolation of the linear dependence $h\nu_m$ (T) in the interval 100 ÷ 370° K to absolute zero temperature and α_ν is the temperature coefficient which does not depend on the composition

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TSARENKOV, B.V., et al, Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 677-681

of the solid solution and is equal to $4.8 \cdot 10^{-4}$ e.v./degree. The halfwidth of the radiation band (δ) is decreased with an increase of x; δ is linearly increased with an increase of temperature in the interval $77 \div 370^{\circ}$ K. The temperature coefficient of the halfwidth of the band practically does not depend on the composition of the solid solution and is equal to $1 \div 1.3$ of the Boltzmann constant. The photon flux of the radiation band of solid solutions with a fixed level of excitation is exponentially decreased with an increase of temperature in the temperature range $77 \div 370^{\circ}$ K. The mechanism of the radiative recombination is explained by a comparison of the energy of the maximum radiation spectra with a wide forbidden zone (E_g) of solid solutions of various compositions which are determined by the spectra of the short-circuit photocurrent of the structure Au-$Ga_{1-x}Al_xAs$ with a metal-semiconductor barrier. The edge of the photocurrent spectra has a form characteristic of the base of absorption of light at the free excitons. Because the energy of the maximum of the photoluminescent spectra proved to be approximately equal to the width of the forbidden zone, determined by the energy of the free excitons, then this made it possible to assume that the radiation observed is inherent and not extrinsic. Because the halfwidth of the radiation band at high temperatures proved to be smaller than expected for

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TSARENKOV, B.V., et al, Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 677-681

interband transition, then this made it possible to assume that the inherent radiation contributes an important portion of the annihilation of the free excitons. The authors are grateful to D.N. Nasled for his interest and attention to the work. 4 fig. 15 ref. Received by editors, 2 Aug 1971.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

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UDC 621.382.2

IMENKOV, A. N., SIUKAYEV, N. V., KHADIKOV, M. K., Leningrad Physico Technical Institute imeni A. F. Ioffe, Leningrad, Academy of Sciences USSR; North Ossetian State University imeni K. L. Khetagurov, Ordzhonikidze, Ministry of Education RSFSR

"Temperature Relations of the Electrical Properties of Tunnel p-n-Junctions in InP"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 886-891

Abstract: Electrical properties of tunnel p-n-junctions in InP between 77-340°K were investigated to determine current mechanisms at various voltages and parameters of the semiconductor in the n- and p-region. In the presence of inverse voltages the current predominates as a result of the direct tunnel effect of the conduction band -- light hole band. The effective mass of the electrons in the light hole band was determined. With forward voltages in the negative resistance section the current is basically caused by the tunnel effect of the conduction band -- impurity acceptor band. In the second ascending section of the

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IMENKOV, A. N., et al., Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 886-891

voltampere characteristic, the current obviously arises from tunneling from the deep impurity level. Monocrystalline plates of p-InP alloyed with Zn with a current carrier concentration basically of $p = 7.8.10^{18}$ cm^{-3} and a mobility of $\mu_p = 30$ $cm^2/v.sec$ at 295°K were used in the experiment. I_{max}/I_{min} depends much less on temperature than in the tunnel p-n-junctions made of GaAs and Ge. The characteristic voltages V_{max}, V_{min} and V_r decrease with an increase in temperature; dV_{max}/dT is very large and larger than expected as a result of variation in depth of the Fermi levels.

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IMERELI, V.B.

AA0044234 UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 2/70

243680 CABLE LAYING MACHINE digs trenches for cables along an old cable. A track laying motor vehicle pulls a plough. The couplingbetween the plough and the towing motor is pneumatic and it is controlled by radio signals. The level and the direction of ploughing are determined by the relative position of the plough to the cable.
23.3.68 as 1228413/29-14. YA.I.MARCHEVSKI et al(3.10.69)
Bul 17/14.5.69. Class 21c. Int.Cl. H 02g.

AUTHORS: Marchevskiy, Ya. I., Furto, G. S., Fishgal, S. I., Balaban, A. S., Pil'ganchuk, P. N., Imereli, V. B., Stepanenko, L. K., Parkhomenko, A. I., Min'kovskaya, S. M., Voznesenskiy, I. I., Vishnyakov, I. Ye., Zinoveyev, A. I., Razumovskiy, O. V., Khrulev, V. V., Politova, A. Ye., Khayzeruk, Ye. M., Smirnov, V. I., Malakhova, V. M.

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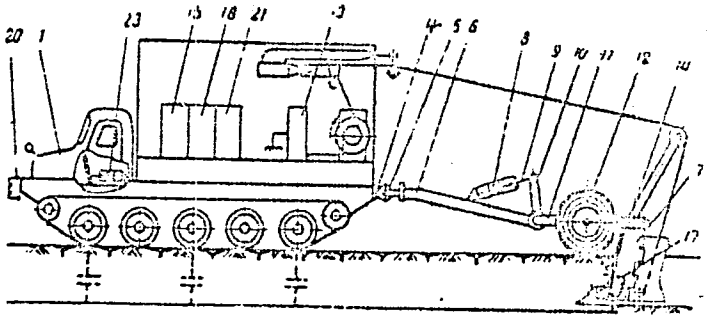

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1/2 020 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--THE TYPES OF DEVELOPMENT AND OUTCOMES IN PSYCHOGENIC DEPRESSIONS
-U-
AUTHOR-(02)-FELINSKAYA, N.I., IMMERMAN, K.L.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970, VOL 70, NR 4, PP 564-569
DATE PUBLISHED-------70

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2/2 020 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0106286

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN FORENSIC PSYCHIATRIC PRACTICE THE FOLLOWING 3 MAIN SYNDROMES OF PSYCHOGENIC DEPRESSION MAY BE ENCOUNTERED: 1) DEPRESSIVE PARANOID; 2) ASTHENO DEPRESSIVE; 3) DEPRESSIVE HYSTERICAL. THE DEPRESSIVE PARANOID SYNDROME DEVELOPS GRADUALLY, IS ACCOMPANIED BY IDEAS OF SELF ACCUSATION, SYMPTOMS OF DEPERSONALIZATION AND DEREALIZATION, THE KANDINSKY SYNDROME. THE COURSE OF THE STATE IS PROTRACTED. IN THE POSTREACTIVE PERIOD THE ASTHENICAL SYNDROME IS QUITE EVIDENT. SUBSEQUENTLY A PATHOCHARACTEROLOGICAL STRUCTURE MAY BE FORMATED OF THE PARANOID PSYCHOPATHY TYPE, LESS FREQUENTLY PSYCHOPATHY OF THE EXCITATIVE TYPE. TDE ASTHENO DEPRESSIVE SYNDROME IS EXPRESSED IN A GRADUAL INCREASE OF PSYCHOMOTOR RETARDATION. THE MAIN SYMPTOMS ARE DESPONDENCY, APATHY, FATIGUE, AN INHIBITION OF ALL MENTAL FUNCTIONS. THE COURSE IS SLUGGISH PROGRESSIVE. IN THE POSTREACTIVE PERIOD A PATHOCHARACTEROLOGICAL PERSONALITY STRUCTURE MAY APPEAR OF THE ASTHENICAL PSYCHOPATHY TYPE, OR THE POSTREACTIVE CHANGES MAY ACQUIRE A CHARACTER OF AN ORGANIC DEFECT. THE HYSTERICAL DEPRESSION IS OF A MORE EXPRESSIONAL TYPE WITH A MOBILITY OF CLINICAL SYMPTOMS AND IS ACCOMPANIED BY ELEMENTS OF OTHER HYSTERICAL REACTIONS. THE COURSE IS FAVORABLE. RECOVERY MAY APPEAR DIRECTLY AFTER A CHANGE IN THE ENVIRONMENT OR AFTER TREATMENT. HOWEVER, IN THE REMOTE POSTREACTIVE PERIOD THERE MAY BE A TENDENCY TO FIXED FORMS OF REACTIVITY DUE TO DIFFERENT PSYCHOGENIC FACTORS. THE SUBSEQUENT POSTREACTIVE DEVELOPMENT MAY BE IN THE FORM OF AN INCREASING PERSONALITY DISORDER OF THE HYSTERICAL TYPE.

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USSR UDC 619:614.485:613.643

IMMIYEV, YA., All-Union Scientific Research Institute of Veterinary Sanitation and REZVYKH, A. G., Tomilinsk Poultry Farm

"Disinfection of Air in Intake Ventilation Ducts"

Moscow, Veterinariya, No 10, 1971, pp 28-29

Abstract: Ultraviolet irradiation (for 60 days) of air entering poultry houses containing 80,000 chicks 1 to 60 days old had a marked effect on the survival rate of the animals; only 1.7% died as compared with 4.32% of controls. The average weight of the experimental chicks was 16.3 g higher than that of controls. The carbon dioxide concentration of the air in the experimental poultry house did not exceed 0.14%, as compared with 0.2% in the control. The number of negatively and positively charged light ions in the experimental poultry house was twice that in the control, while the dust concentration was, respectively, 1.8 and 2.3 mg/m^3. The savings from the higher survival rate and greater weight gains resulting from the use of bactericidal ultraviolet lamps far exceeded the costs involved.

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USSR UDC: 621.373.029.52

IMRINI, S. G.

"A Graphic Method of Calculating a Single-Tube Three-Section RC Oscillator"

Za tekhn. progress (For Technical Progress), 1970, No 8, pp 3-5 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12D384)

Translation: The article presents a schematic equivalent circuit for a three-section RC oscillator which is used as a basis for deriving equations for determining the oscillator frequency and the gain of the circuit. The resultant expression for frequency is compared with the frequency expression for a four-section RC oscillator, and a relating expression is found. This expression can be used in conjunction with graphs of the four-section RC oscillator to determine the frequency of the three-section RC oscillator and the resistive and capacitive feedback elements. After finding f_3, the gain k of the three-section RC oscillator is calculated, and a family of graphs $k = F(f_3)$ is plotted so that the gain k can be graphically determined. Four illustrations, two tables, bibliography of three titles.

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USSR

UDC 576.8.095.15

IMSHENETSKII, A. A., LYSENKO, S. V., SOTNIKOV, G. G., ABYZOV, S. S.
(Institute of Microbiology, USSR Academy of Sciences)

"Effect of Very Low Temperatures on the ATP of Microorganisms"

Moscow, Mikrobiologiya, 1973, Vol 42, No 4, pp 651-654

Abstract: Very low temperatures were shown to have a stabilizing effect on ATP. Microorganisms (Serratia marcescens, Sarcina flava, Bacillus simplex, Zygosaccharomyces vini, Candida tropicalis) kept at -196°C (liquid nitrogen) showed no loss of ATP. In non-spore-forming bacteria and yeasts stored at +5°C the ATP was largely consumed. Bacillus simplex spores contain a relatively small amount of ATP, which was not used up during storage at either -196 or +5°C. The ATP was released from the cells by boiling and was detected by the chemiluminescent reaction.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

USSR UDC 621.317.761

VITOSLAVSKIY, E. P., VUL'CHIN, Yu. G., IMSHENETSKIY, V. V., MARTYNIV, M. S., and SOLYANKO, B. V.

"UHF Frequency Meter"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No. 33, 1971, p 155

Abstract: This frequency meter contains an electronic counter, tuned oscillators, a mixer, and two AFC circuits. To simplify the circuit and the measuring process, the reference frequency inputs of both phase detectors are connected to the output of one of the time-base divider stages of the counter. The input of this stage is connected to the mixer output.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

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UDC 681.327

IMSHENETSKIY, V. V., KUZ'MIN, Yu. I., and SIKORSKIY, Yu. M.

"Procedure for Recording Information in a Memory with Pulse-Phase Representation of Numbers"

USSR Author's Certificate No 264771, filed 18 Jul 66, published 17 Jun 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6, Jun 71, Abstract No 6B230P)

Translation: The proposed invention belongs to computer engineering and is designed for recording information in memory with pulse-phase representation of numbers. A procedure for recording information in pulse-phase multistable elements is well known. The purpose of the invention is the creation of a procedure which permits reduction of the time required to record the information in the pulse-phase elements and also to simplify it. The proposed procedure is distinguished from the well-known one by the fact that in the initial state the memory input is excited from the source of the first cycle pulse train corresponding to entering a "0"; for entering a number, the source of the first train of cycle pulses is shut off and the memory input is excited from the source of another train of cycle pulses of the

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IMSHENETSKIY, V. V., et al., USSR Author's Certificate No 264771, filed 18 Jul 66, published 17 Jun 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6, Jun 71, Abstract No 6B230P)

same frequency as the first train and shifted relative to the first by a time interval corresponding to the number entered in memory; in the input pulse copy mode, the numbers are entered on the next reference to one of the set of cycle pulse trains sequentially and uniformly shifted in time relative to each other.

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IMSHENNIK, V. K., AFANAS'YEV, A. M., GOL'DANSKIY, V. I., MAKAROV, Ye. F., PLACHINDA, A. S., SUZDALEV, I. P., Institute of Chemical Physics, USSR Academy of Sciences

"Investigation of the Dynamic and Static Distortions of Complexes by Using Gamma-Resonance Spectroscopy"

Leningrad, Fizika Tverdogo Tela, Vol 15, No 9, Sep 73, pp 2656-2660

Abstract: Gamma-resonance spectroscopy is used to study dilute paramagnetics -- a frozen aqueous solution of $FeCl_3$ (0.1 M $FeCl_3$ and 8.3 M HCl) and a hydrated iron-containing sulforesin at a temperature of 90°K in an external magnetic field of 450 oersteds. A computer was used to separate three relaxation times τ_{S_z} corresponding to the Kramers doublets, $S_z = \pm 5/2, \pm 3/2, \pm 1/2$, and also to determine the parameter λ describing departure of the crystal field from the axially symmetric. An attempt is made to relate the quantity λ to static distortion of the complex. From the fact that the three relaxation times are related through two parameters P_1 and P_2, it is concluded that spin-lattice relaxation is a two-phonon

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IMSHENNIK, V. K. et al., Fizika Tverdogo Tela, Vol 15, No 9, Sep 73, pp 2656-2660

phenomenon. It is also shown that the relation between P_1 and P_2 gives information on the anisotropy of oscillations of the ligands in the complex.
The authors thank Yu. F. Krupyanskiy for valuable advice and comments.

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USSR

IMSHENNIK, V. S., PADYOZHIN, D. K., Institute of Applied Mathematics, Academy of Sciences of the USSR

"Neutrino Heat Conduction in Collapsars"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 63, No 5(11), Nov 72, pp 1548-1561

Abstract: Gasdynamic calculations of gravitational stellar collapse show that: 1) the dynamics of collapse is determined to a considerable extent by processes of neutrino emission, the beta (Urca) process playing the predominant part among all mechanisms; 2) at some stage of collapse, the central nucleus of the star becomes opaque to its own neutrino emission. In this paper, neutrino and antineutrino energy and momentum transfer are considered and incorporated into the gasdynamic analysis. A system of equations of neutrino gasdynamics is derived in a heat conduction approximation which is a generalization of the radiant heat conduction of photons taken from radiation gasdynamics. A lepton charge diffusion equation stemming from analysis of the kinetics of β-interactions in a medium of arbitrary nuclear composition is added to this system of equations. The authors calculate all

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110016-7

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IMSHENNIK, V. S., PADYOZHIN, D. K., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 63, No 5(11), Nov 72, pp 1548-1561

transfer coefficients for the high-temperature case in which the baryon component of matter is comprised of free nucleons. A spherical-symmetry boundary value problem is formulated for the central nucleus of the star. The authors thank Ya. B. Zel'dovich for interest in the work and constructive criticism, and Yu. S. Kopysov for discussion.

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IMSHENNIK, V. S. (Moscow)

"Two-Dimensional Nonstationary Solutions of Magnetohydrodynamic Equations"

Moscow, Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 2, 1972, pp 3-7

Abstract: The article considers a certain class of simple solutions of magnetohydrodynamic equations for two-dimensional, plane nonstationary motion. Two particular subclasses of solutions with completely different physical properties are indicated, with the stress on the subclass consisting of solutions with cumulative two-dimensional compression of a substance in the neighborhood of the zero line of the magnetic field. The author thanks M. A. Leontovich and S. I. Syrovatskiy for valuable discussions and L. V. Ovsyannikov for criticism and a number of useful comments.

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IM TKHEK-DE, SAPRYKIN, E. G., and SHALAGIN, A. M.

"Some Anomalies in the Absorption of a Light Wave by a Medium Placed in a Magnetic Field"

Leningrad, Optika i Spektroskopiya, Aug 73, pp 202-204

Abstract: An experimental discovery has been made of the presence of an anomalous relationship between the absorption coefficient of laser radiation (0.6328 microns) by excited neon atoms at the $3s_2$-$2p_4$ transition, and the value of a transverse magnetic field. An investigation was made of the absorption of linearly and circularly polarized monochromatic radiation at different gas pressures, discharge currents, and radiation intensities. It was revelaed that on the curve of the relationship of the absorption coefficient to the value of the magnetic field there appears an acute "peak" structure, not predicted by the ordinary theory, with the center at the zero of the magnetic field. This "peak" has a relative amplitude of about 10^{-4} and a width much smaller than the Doppler width, and occurs at arbitrarily small radiation intensities. Its width and amplitude parameters in relation to the value of total absorption for linearly and circularly polarized waves are approximately the same. An investigation was made of the parameters of the "peak" to the pressure, the discharge current, the intensity and polarization of the transmitted radiation. 2 figures. 8 references.
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